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## Brief Report

# Schema therapy with exposure and response prevention for the treatment of chronic anxiety with comorbid personality disorder

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**Background and objectives.** A considerable group of patients with anxiety disorders do not respond to guideline CBT treatment, possibly due to comorbid personality disorder (PD) traits. Schema therapy (ST) is an integrative treatment for personality disorders, and preliminary evidence suggests that it also affects anxiety. The present study examined the effects of a combination treatment ('SCHerp': ST + exposure and response prevention) in a non-responsive outpatient group suffering from chronic anxiety and comorbid cluster C personality disorder.

**Methods.** Psychological malfunction ( $n = 42$ ), and adaptive and maladaptive schema modes ( $n = 49$ ) were assessed pre- and post-treatment.

**Results.** Patients showed statistically significant decreases in psychological malfunction and maladaptive modes, and significant increases in adaptive modes from pre- to post-treatment. Changes in modes were correlated with changes in psychological malfunction.

**Limitations.** No control group or follow-up measurements were included.

**Conclusions.** The combination of ST and exposure with response prevention may be a viable avenue for research and treatment for this subpopulation. However, further research is needed to confirm and enhance effectiveness and identify working mechanisms of SCHerp.

## Practitioner points

- The SCHerp programme combines schema therapy with exposure and response prevention to tackle chronic anxiety in patients with comorbid personality disorder

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Sylvie Stappenbelt has moved since this study was undertaken and is now based at [GGNet Scelta Nijmegen, Sint Annastraat 312c, 6525 HG Nijmegen, The Netherlands]

- SCHerp significantly reduced psychological malfunction and maladaptive modes, and increased adaptive modes
- Changes in schema modes correlated with changes in psychological malfunction, suggesting that schema modes are an appropriate treatment target in this population
- No active control group was included so no therapy-specific factors can be determined at this stage

In 30–40% of patients with anxiety disorders, symptoms are not alleviated after guideline cognitive behaviour therapy (CBT) (Clark, 2011; Durham, Chambers, MacDonald, Power, & Major, 2003). Anxiety disorders show a 12-month comorbidity with (cluster C) personality disorders (PD) of 40% (Brandes & Bienvenu, 2009; Friberg, Martinussen, Kaiser, Øvergård, & Rosenvinge, 2013; Grant et al., 2005). There is some evidence that patients with comorbid diagnoses of anxiety and PD show similar improvement in anxiety symptoms with guideline CBT compared to those without comorbid PD (e.g., Dreesen & Arntz, 1998; Reich, 2003). However, comorbid diagnoses of PD have also been associated with worse treatment outcomes for patients diagnosed with anxiety disorders (Reich, 2003; Skodol, Geier, Grant, & Hasin, 2014), decreased confidence in treatment (Martino, Menchetti, Pozzi, & Berardi, 2012), less stable therapeutic relationships (Bienenfeld, 2007), and elevated dropout (Sanderson, Beck, & McGinn, 1994; but see Olatunji, Cisler, & Tolin, 2010; Swift & Greenberg, 2012). Thus, although comorbid PD diagnosis is not a general restriction for guideline CBT for anxiety, a subgroup of chronic non-responders may require additional intervention. In this naturalistic observational study, we investigated whether a combination of schema therapy (ST) with exposure and response prevention (ERP) could provide a potential effective treatment option for a chronic treatment-resistant subpopulation of patients with anxiety disorders and a comorbid diagnosis of PD.

Schema therapy was developed for patients with diagnoses of PD who do not respond to guideline treatment (Young, Klosko, & Weishaar, 2003). A central ST concept is early maladaptive schemas (EMS), which are described as trait-like dysfunctional thinking patterns that develop during childhood if basic emotional needs are not met. Triggered EMS can lead to the activation of schema ‘modes’, which manifest in rapid changes in mood and behaviour. Anxiety is related to a higher prevalence of EMS (Cámara & Calvete, 2012), and EMS may play a role in non-response to CBT (Gross, Stelzer, & Jacob, 2012; Hoffart, 2012). In ST, patients learn to strengthen the *healthy adult* mode to deal with situations that trigger EMS in a more functional way (Young et al., 2003).

Preliminary findings of ST in anxiety are promising. For instance, a combination of cognitive therapy and ST was more effective than psychodynamic treatment in improving social functioning of patients with generalized anxiety disorder (Gude & Hoffart, 2008). In post-traumatic stress disorder (PTSD), reductions in EMS and anxiety were stronger after ST than CBT (Cockram, Drummond, & Lee, 2010). Gross et al. (2012) reported two successful cases of the combination of CBT/ST in the treatment of obsessive-compulsive disorder (OCD). Finally, significant reductions in OCD symptoms were reported in a 12-week treatment combining ST and exposure in 10 non-responsive patients with OCD and with or without PD diagnosis (Thiel et al., 2016).

The present study examines changes in psychological malfunction and in schema modes during a treatment programme called ‘SCHerp’ (SCHEMA therapy + exposure and response prevention) in a non-responsive outpatient group with varying anxiety disorders and comorbid cluster C PD diagnosis. We hypothesized that psychological malfunction and the level of maladaptive modes would decrease, while the level of adaptive modes would increase. Reliable change indices and clinically significant changes

were also calculated. Correlations among reliable change scores were explored, as concurrent changes between symptomatology and EMS/modes may be the underlying mechanism of ST (see Renner et al., 2018; Van Vreeswijk, Spinhoven, Eurelings-Bontekoe, & Broersen, 2014).

## Method

### Participants

A convenience sample of 62 outpatients of a specialized mental health care setting for anxiety, OCD, and PTSD disorders was included ( $M_{age} = 34.4$ ,  $SD_{age} = 9.3$ ; 72.6% female). Eligibility for the SCHerp programme included a primary diagnosis of an Axis I anxiety disorder (social anxiety disorder (SAD):  $n = 26$ , OCD:  $n = 19$ , generalized anxiety disorder (GAD):  $n = 10$ , PTSD:  $n = 4$ , panic disorder:  $n = 3$ ), and a comorbid Axis II diagnosis of (cluster C) PD, and non-response to previous guideline treatment. See Supporting information (Participants section) for further details.

### Treatment

SCHerp combines ST with exposure and response prevention in a six-month open group format. For details on the programme, please see Supporting information (Treatment).

### Measures

#### Schema modes

The Schema Mode Inventory (SMI; Young et al., 2007) was used to assess adaptive modes (*bappy child* and *healthy adult*) and maladaptive modes (the other 12 modes) (Schaap, Chakhssi, & Westerhof, 2016). The SMI consists of 124 items rated on a 6-point Likert scale from 1 (*never or hardly ever*) to 6 (*always*). The SMI shows good reliability and validity (Lobbestael, Van Vreeswijk, Spinhoven, Shouten, & Arntz, 2010). Cronbach's alpha was .82 and .93 (T1), and .89 and .95 (T2) for adaptive and maladaptive modes in the current sample, respectively.

#### Psychological malfunction

The Outcome Questionnaire-45 (OQ-45; Lambert et al., 1996) is a widely used self-report questionnaire in outcome research assessing psychological malfunction, suitable for comparing patients with different diagnoses (Hatfield & Ogles, 2004). The 45 items are answered on a 5-point Likert scale from 0 (*never*) to 4 (*always*) and fall into three subscales: (1) symptom distress (SD), (2) problems in interpersonal relations (IR), and (3) problems in social role performance (SR). A cut-off sum score of 63 indicates clinically significant symptom levels. The OQ-45 possesses good psychometric characteristics (De Jong & Spinhoven, 2008), with a Cronbach's alpha of .88 (SD: .89, IR: .72, SR: .43) at T1 and .94 (SD: .94, IR: .81, SR: .66) at T2 in the current study.

### Procedure

There were two points of data collection: T1: after the preparatory session and before treatment start, and T2: at treatment completion. A 3-week leniency criterion was applied.

**Results**

For additional details regarding the statistical approach, descriptive statistics, SMI reliability analysis, and a description of the correlations reported in Table 1, please see Supporting information (Statistical approach and Results).

**Statistically significant change**

Paired samples *t*-tests indicated statistically significant decreases from T1 to T2 in OQ-45 scores,  $t(41) = 5.30, p < .001, d = .75, 95\% \text{ CI } [0.43, 1.07]$  and maladaptive modes,  $t(48) = 5.25, p < .001, d = .62, 95\% \text{ CI } [0.36, 0.87]$ ; and statistically significant increases in adaptive modes,  $t(48) = -4.40, p < .001, d = -.66, 95\% \text{ CI } [-0.99, -0.33]$ . Statistically significant decreases were also found for all three subscales of the OQ-45 (see Table S1 in Supporting information).

**Reliable and clinically significant change**

On the OQ-45 (total scores), reliable deterioration was found for three patients (7.1%, 95% CI [2.5, 19.0]), indeterminate change for 15 (35.7%, 95% CI [23.0, 50.8]), and reliable improvement for 24 patients (57.1%, 95% CI [42.2, 70.9]). Clinically significant improvement was found for 11 patients (26.2%, 95% CI [15.3, 41.1]), who all showed reliable improvement as well.

For the SMI, reliable deterioration was found for the same three patients on maladaptive modes (6.1%, 95% CI [2.1, 16.5]), and adaptive modes (6.1%, 95% CI [2.1, 16.5]). Indeterminate change was found for 24 patients on maladaptive modes (49.0%, 95% CI [35.6, 62.5]) and for 30 patients on adaptive modes (61.2%, 95% CI [47.2, 73.6]). Reliable improvement was found for 22 patients on maladaptive modes (44.9%, 95% CI [31.9, 58.7]) and 16 patients on adaptive modes (32.7%, 95% CI [21.2, 46.6]).

Correlations between reliable change on the OQ-45 and adaptive modes ( $r = -.64, 95\% \text{ CI } [-0.81, -0.39], p < .001$ ) and maladaptive modes ( $r = .58, 95\% \text{ CI } [0.30, 0.77], p < .001$ ) were statistically significant, indicating that decreases in malfunctioning are associated with increases in adaptive modes and decreases in maladaptive modes.

**Table 1.** Correlations among pre- and post-treatment measurements

Variable	1	2	3	4	5	6
1. T1 OQ-45	–					
2. T2 OQ-45	.58**	–				
3. T1 SMI-Mal	.24	.17	–			
4. T2 SMI-Mal	.28	.59**	.66**	–		
5. T1 SMI-Ad	-.63**	-.34*	-.49**	-.31*	–	
6. T2 SMI-Ad	-.50*	-.76**	-.15	-.56**	.45*	–

Note. T1 = pre-treatment; T2 = Post-treatment; OQ-45 = Outcome Questionnaire-45; SMI = Schema Mode Inventory; Mal = maladaptive modes; Ad = adaptive modes.  
\* $p < .05$ ; \*\* $p < .001$ .

## Discussion

Consistent with our first hypothesis, there was a statistically significant decrease in psychological malfunction, with a medium effect size, during SCHerp. All three subscales of the OQ-45 decreased significantly, indicating impact on anxiety symptoms as well in the symptom distress subscale. In line with the second hypothesis, maladaptive modes significantly decreased, whereas adaptive modes significantly increased, also with medium effect sizes. About a third to half of the patients reached reliable improvements on psychological malfunction, maladaptive and adaptive modes (57.1, 44.9, and 32.7%, respectively). A quarter of the patients (26.2%) reached clinically significant improvements on psychological malfunction. Moreover, changes in psychological malfunction were associated with changes in both adaptive and maladaptive modes.

These findings are in line with the study by Thiel et al. (2016), which first showed the effectiveness of a programme similar to SCHerp in a pilot of 10 patients with OCD with or without diagnoses of cluster C PD. Effect sizes found in this study are also comparable to research on combined group ST and CBT in patients with PD diagnosis (Renner, Arntz, Leeuw, & Huibers, 2013). With regard to clinical significance, the results are more modest than in previous studies. In a short-term group ST with a heterogeneous patient group, Van Vreeswijk et al. (2014) found reliable and/or clinically significant improvement in general distress in about half of the patients, and an indeterminate change in about a third of patients. However, the majority of these patients did not have any comorbidity. Schaap et al. (2016), who investigated an inpatient ST programme for non-responding patients with PD diagnosis, found reliable improvement in 70–85% of patients regarding general distress as well as (mal) adaptive modes. Their treatment lasted 12 months, and not all patients showed comorbidity. Notably, patients in the current study showed relatively small improvements in adaptive modes. This finding is important as improvement in symptoms was more strongly correlated with adaptive than maladaptive modes. This implies that SCHerp may be improved by focusing on further strengthening adaptive schema modes. The correlated change between psychological malfunction and modes is comparable to the findings by Renner et al. (2018) and Van Vreeswijk et al. (2014) and suggests concurrent associations between changes in anxiety symptoms and schema modes. However, the absence of intermediate measurement points prohibits conclusions about potential mediation.

There are several limitations to the present study. First, this was a naturalistic observational study, which has benefits in terms of ecological validity, but obvious limitations in drawing causal conclusions about effectiveness. A next step could be a comparison with a passive control condition, such as a natural waiting list. Comparisons with active evidence-based treatments, such as guideline CBT and pharmacotherapy, will be informative. However, these designs would have ethical objections as the target population by definition did not respond to guideline treatment. Currently, it is unclear what active control group would be best suited for a comparison. In addition, studies dismantling the working mechanisms are needed. Examining changes in specific modes, EMS, and symptoms by including one or more intermediate measurement points during treatment could provide further insight into the sequential changes in modes and anxiety symptoms. Moreover, assessing session-to-session or weekly changes could advance our knowledge on the effects of specific therapy processes (see Renner et al., 2018).

Second, although both statistical and clinically significant changes were found in this study, still a significant proportion of patients did not benefit sufficiently. This indicates that the programme can be further improved, for which effectiveness and dismantling studies will be important. The lack of follow-up measurements prevents us from making

conclusions about long-term clinical gains. Third, the moderate sample size and heterogenous sample did not allow for a multivariate approach or a more detailed analyses of specific modes or disorder-specific symptoms. Furthermore, aggregation of SMI subscales into adaptive and maladaptive schema mode composite scores was based on earlier research (Schaap et al., 2016) and showed adequate internal consistencies in our sample, yet a factor analysis is needed to validate this approach empirically.

Overall, this study aimed to contribute to research on chronic and treatment-resistant anxiety in order to develop treatment options for this specific population. Our study showed that a combination of ST and CBT may be helpful. ST techniques may also provide clinicians with a rationale for dealing with behaviours that could hinder exposure. Clinical observations showed a low dropout rate (6% in our sample), which is encouraging. Given the methodological limitations, further controlled research is needed to study effectiveness and working mechanisms of ST combined with ERP for chronic anxiety with comorbid PD diagnoses.

### **Ethical statement**

Anonymous data from electronically registered routine outcome monitoring were used for this study. As this data does not relate to an identified or identifiable natural person, it does not fall under the European General Data Protection Regulation (General Data Protection Regulation, 2020). Patients were not submitted to any specific action or intervention for the study, measures and assessment procedure were part of usual care. Therefore, according to Dutch Law on Medical Ethics, no specific informed consent or a review of a Medical Ethical Committee was required, although patients provided a general consent for use of this type of anonymous data for research purposes as standard intake procedure at which they received the SCHerp programme.

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### **Conflict of interest**

All authors declare no conflict of interest.

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### **Author contributions**

Nancy Peeters (Data curation; Formal analysis; Software; Writing – review & editing) Sylvie Stappenbelt (Conceptualization; Writing – original draft) William J Burke (Data

curation; Formal analysis; Methodology; Writing – original draft; Writing – review & editing) Boris van Passel (Conceptualization; Data curation; Project administration; Supervision; Writing – original draft; Writing – review & editing) Julie Krans (Conceptualization; Data curation; Formal analysis; Methodology; Project administration; Resources; Supervision; Writing – original draft; Writing – review & editing).

## Data availability statements

Due to internal policies of the mental health care institute where these data were collected the dataset used in this article, it is not publicly available. However, anonymized data can be obtained from the corresponding author upon request.

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### **Supporting Information**

The following supporting information may be found in the online edition of the article:

**Table S1.** T1 and T2 scores of the OQ-45 subscales.